



TITLE:

# The 110th ICR Annual Symposium

AUTHOR(S):

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CITATION:

The 110th ICR Annual Symposium. ICR Annual Report 2011, 17: 102-105

ISSUE DATE:

2011

URL:

<http://hdl.handle.net/2433/139155>

RIGHT:

# THE 110TH ICR ANNUAL SYMPOSIUM

(10 December 2010)

## ORAL PRESENTATIONS

NAKAMURA, Yasuyuki (Polymer Controlled Synthesis)  
“Living Radical Polymerization Using Organotelluriums: Photo-Polymerization and Control of Polymer Chain End Structure”

NAKAJIMA, Yumiko (Organotransition Metal Chemistry)  
“Synthesis and Properties of 3d Metal Complexes Bearing a Bis(phosphaethenyl)pyridine Ligand”

ICHIKAWA, Noriya (Advanced Solid State Chemistry)  
“Changes of Structure and Property in Thin Films of Transition Metal Oxides Due to Low-temperature Reduction/Oxidation”

TAKARABE, Masataka et al. (Bioknowledge Systems)  
“Network-based Analysis and Characterization of Drug Interactions”

SEIKE, Hirofumi et al. (Organic Main Group Chemistry)  
“Nickel-Catalyzed Alkenylative Cross-Coupling Reaction of Alkyl Sulfides”

IMANISHI, Miki (Biofunctional Design-Chemistry)  
“Creation of Artificial Transcription Factors towards Control of Biological Activities”




TSUJII, Yoshinobu (Chemistry of Polymer Materials)  
“Materials Design by Living Radical Polymerization: New Functions via Structural Control”

– ICR Award for Young Scientists –  
MIZUHATA, Yoshiyuki (Organoelement Chemistry)  
“1,2-Dialkynyldisilenes: Silicon Analogues of (*E*)-Enediyne”


– ICR Award for Graduate Students –  
HASHIMOTO, Toru (Organic Main Group Chemistry)  
“Iron-Catalyzed Suzuki-Miyaura Coupling of Alkyl Halides”


NAKAMURA, Shuji (Nanospintronics)  
“Nonequilibrium Fluctuation Relations in a Quantum Coherent Conductor”


## POSTER PRESENTATIONS

 : Laboratory Whole Presentation  
 : Laboratory Topic  
 : General Presentation

### — Organoelement Chemistry —


 “Synthesis and Properties of Novel Organic Compounds Containing Heavy Elements”


 SUGAMATA, Koh; SASAMORI, Takahiro; TOKITOH, Norihiro  
“Synthesis and Structures of Various Type of Organotellurium Halides”

 SATO, Takahiro; MIZUHATA, Yoshiyuki; TOKITOH, Norihiro  
“Syntheses and Properties of Trimethylsilyl- and Phenyl-substituted 1,2-Dialkynyldisilenes”


### — Structural Organic Chemistry —


 “Recent Research in Structural Organic Chemistry Laboratory”

 NOBORI, Masahiro; MURATA, Michihisa; MURATA, Yasujiro  
“Investigation on Magnetic Properties of Fullerenes with Encapsulated Dihydrogen”


 KATSUYA, Satoshi; MURATA, Michihisa; MURATA, Yasujiro  
“Studies on Synthesis of Azafullerene Derivatives Directly Connected to Organic Dyes”


### — Synthetic Organic Chemistry —

 HAYASHI, Kazuhiro; MATUBAYASI, Nobuyuki; YOSHIMURA, Tomoyuki; SASAMORI, Takahiro; TOKITOH, Norihiro; KAWABATA, Takeo  
“Creation of Chiral Binaphthyl Surrogates with an Intramolecular Hydrogen Bond, and Its Application to Novel Organometallic Catalysis”

 YOSHIDA, Keisuke; FURUTA, Takumi; KAWABATA, Takeo  
“Regioselective Monoacylation of 2-amino-1,5-pentanediols by PPY Catalysts with Functional Side Chains”

### — Chemistry of Polymer Materials —

 HUANG, Yun; SASANO, Tatsuya; OHNO, Kohji; TSUJII, Yoshinobu  
“Well-organized Assemblies of Hybrid Particles Grafted with Concentrated Polymer Brush”

 NAKANISHI, Yohei; KAWANO, Yuko; OHNO, Koji; TSUJII, Yoshinobu; SAGAWA, Takashi; YOSHIKAWA, Susumu; SATO, Takaya  
“Development of Dye-sensitized Solar Cells Based on Novel Solid-state Electrolyte”

— **Polymer Controlled Synthesis** —

- [LW] “Research Activity of Polymer Controlled Synthesis Laboratory”
- [GE] MISHIMA, Eri; YAMAGO, Shigeru  
“Synthesis of Novel Random and Block Copolymers by Organotellurium-Mediated Controlled / Living Radical Polymerization of (Meth)acrylates and Vinyl Ethers”
- [GE] KONISHI, Shota; KAYAHARA, Eiichi; YAMAGO, Shigeru; NOMURA, Akihiro; GOTO, Atsushi; TSUJII, Yoshinobu  
“Synthesis of Concentrated Polymer Brush via Surface-Initiated TERP”
- [GE] IWAMOTO, Takahiro; WATANABE, Yoshiki; YAMAGO, Shigeru  
“Synthesis of Cycloparaphenylenes and Their Derivatives from Square-Shaped Tetranuclear Platinum Complexes”
- [GE] KITADA, Yukie; NAKAMURA, Yasuyuki; KOBAYASHI, Yu; RAY, Biswajit; YAMAGO, Shigeru  
“Quantitative Analysis of the Effect of AIBN in Organoheteroatom-mediated Living Radical Polymerization”

— **Inorganic Photonics Materials** —

- [LT] NISHIOKA, Satoshi; TOKUDA, Yomei; TAKAHASHI, Masahide; UEDA, Yoshikatu; YOKO, Toshinobu  
“Preparation of Organic-inorganic Hybrid Titanophosphate Membranes with Proton Conductivity”
- [LT] YAMAMOTO, Kazuyuki; TOKUDA, Yomei; CRISTIANA, Figus; TONGJIT, Kichob; PLINIO, Innocenzi; TAKAHASHI, Masahide; YOKO, Toshinobu  
“Preparation of Organic-inorganic Hybrid Hollow Fiber by Self-organization”
- [LT] YAMAMOTO, Taiga; TOKUDA, Yomei; MASAI, Hirokazu; TAKAHASHI, Masahide; YOKO, Toshinobu  
“The Synthesis of Organic-inorganic Hybrid Low-melting Glasses Using Photochemical Reaction”

— **Nanospintronics** —

- [GE] KOYAMA, Tomohiro  
“Current-induced Magnetic Domain Wall Motion in Perpendicular Magnetized Nano-wire”
- [GE] NAKANO, Kunihiro  
“Real-time Detection of the Vortex Core Resonance Motion”

— **Biofunctional Design-Chemistry** —

- [LW] “Research Topics in Biofunctional Design Chemistry Laboratory”
- [GE] TANAKA, Gen; NAKASE, Ikuhiko; FUKUDA, Yasunori; FUTAKI, Shiroh  
“Identification of Potential Receptor that Stimulates the Cellular Uptake of the Arginine-rich Peptides”

— **Chemistry of Molecular Biocatalysts** —

- [LW] “Research Activities of Laboratory of Chemistry of Molecular Biocatalysts”

- [GE] IKEUCHI, Hideyuki; OTOKAWA, Takuya; WATANABE, Bunta; HIRATAKE, Jun  
“Synthesis of Asparagine Synthetase Inhibitors -Synthesis of New Therapeutic Agent for ALL-”

— **Molecular Biology** —

- [LW] “Research of the Molecular Biology Laboratory”

— **Chemical Biology** —

- [LW] “Chemical Biology”

— **Molecular Materials Chemistry** —

- [LT] FUKUCHI, Masashi; FUKUSHIMA, Tatsuya; GOTO, Atsushi; KAJI, Hironori  
“Analysis of Molecular Orientation in Polyfluorene Films by Solid-state NMR”
- [GE] TOKUDOME, Yasuaki; NAKANISHI, Kazuki; KOSAKA, Sho; KARIYA, Ayuta; HANADA, Teiichi; KAJI, Hironori  
“Synthesis of High-silica and Low-silica Zeolite Monoliths with Trimodal Pores”

— **Hydrospheric Environment Analytical Chemistry** —

- [LW] “Recent Research Topics from Hydrospheric Environment-Analytical Chemistry”
- [GE] WATANABE, Kazuya; UMETANI, Shigeo; SOHRIN, Yoshiki  
“Cu(II) or Pd(II) Imprinted Adsorbents for the Separation of Metal Ions”

— **Solution and Interface Chemistry** —

- [LT] SHINTANI, Megumi  
“NMR-NOE and MD Simulation Study on Intermolecular Interaction and Dynamics of Lipid Membranes with Different Curvature”
- [GE] KIMURA, Hiroshi  
“Mechanisms and Kinetics for Hydrothermal Decomposition of Glucose”

— **Molecular Microbial Science** —

- [LW] “Introduction of Molecular Microbial Science Lab.”

— **Polymer Materials Science** —

- [LW] “Recent Research Topics in Polymer Material Science Laboratory”
- [LT] MATSUI, Kazuya  
“Phase Separation and Dewetting Process of Polymer Blend Thin Film as Studied by Neutron Reflectivity”
- [GE] MATSUMOTO, Norihiro  
“Crystallization of Poly(Butylene-2,6-Naphthalate) through the Mesomorphic Phase”

- GE FUJIWARA, Tetsuaki  
“Precursor of Shish-kebab in Isotactic Polystyrene Induced by Shear Flow”

— **Molecular Rheology** —

- LW “Laboratory of Molecular Rheology”

— **Molecular Aggregation Analysis** —

- LT YOSHIDA, Hiroyuki; SATO, Naoki  
“Depth Profiling of Energy Levels of Organic Semiconductors by Photoemission Spectroscopy”
- GE ASAMI, Koji  
“Dielectric Spectroscopy Reveals Nanoholes of Erythrocyte Membrane Ghosts”

— **Particle Beam Science** —

- LW “Activity of Particle Beam Science Research Laboratory”
- GE TONGU, Hiromu; IWASHITA, Yoshihisa; ICHIKAWA, Masahiro  
“Study for Inspections of the Superconducting Cavities”
- GE SOUDA, Hikaru; NAKAO, Masao; HIROMASA, Tatsuya; TONGU, Hiromu; NODA, Akira; JIMBO, Kouichi; OKAMOTO, Hiromi; YU, Peicheng; HE, Zhengqi; GRIESER, Manfred  
“Transverse Laser Cooling Experiment at S-LSR”

— **Laser Matter Interaction Science** —

- GE JAHANGIRI, Fazal; HASHIDA, Masaki; NAGASHIMA, Takeshi; HANGYO, Masanori; TOKITA, Shigeki; SAKABE, Shuji  
“Directional Circularly Polarized THz Beam Emission from Air Plasma Produced by an Intense Femtosecond Laser Pulse”
- GE INOUE, Shunsuke; TOKITA, Shigeki; NISHOJI, Toshihiko; OTANI, Kazuto; HASHIDA, Masaki; SAKABE, Shuji  
“Ultrafast Electric Field Diagnostics for Femtosecond Laser Plasma Using Laser-Produced Electron Pulses and an Electron Imaging System”
- GE NISHOJI, Toshihiko; TOKITA, Shigeki; INOUE, Shunsuke; OTANI, Kazuto; HASHIDA, Masaki; SAKABE, Shuji  
“Characteristics of Electrons Emitted from the Interaction of an Intense Laser Pulse with a Thin Foil”
- GE MIYASAKA, Yasuhiro; HASHIDA, Masaki; IKUTA, Yoshinobu; TOKITA, Shigeki; SAKABE, Shuji  
“Mechanism of Femtosecond Laser Nano Ablation for Metals ~Measurement for Angular Distribution of Ion Emission~”

— **Electron Microscopy and Crystal Chemistry** —

- LW “Research Activities in Laboratory of Electron Microscopy and Crystal Chemistry”
- GE HARUTA, Mitsutaka  
“Study of Distortion in Transition Metal Oxide Using Site-resolved STEM-EELS”

— **Structural Molecular Biology** —

- LW “Research Activities in Laboratory of Structural Molecular Biology”

— **Organic Main Group Chemistry** —

- LT OKADA, Yoshihiro; YOSHIMOTO, Yuya; HATAKEYAMA, Takuji; NAKAMURA, Masaharu  
“Iron-Catalyzed Cross-Coupling of Alkyl Halides with Alkynyl-magnesium Reagents”
- GE HASHIMOTO, Sigma; OBA, Tsuyoshi; HATAKEYAMA, Takuji; NAKAMURA, Masaharu  
“Synthesis of Novel  $\pi$ -curved Molecules with Phosphorus Junction”
- GE SASANO, Daisuke; OGATA, Kazuki; ISOZAKI, Katsuhiro; SEIKE, Hirofumi; TAKAYA, Hikaru; NAKAMURA, Masaharu  
“Controlled Metal Array Formation Based on Novel Metal-lated Amino Acid: Synthesis and Functions of NCN-Pincer Transition-Metal Norvaline Peptides”
- GE ITOH, Takuma; ITO, Shingo; NAKAMURA, Masaharu  
“Stereoselective Carbometalation of Oxa- Azabicyclic Alkenes under Iron Catalysis”

— **Advanced Solid State Chemistry** —

- LW “Introduction of the Advanced Solid State Chemistry Laboratory”
- GE TOHYAMA, Takenori; SAITO, Takashi; SHIMAKAWA, Yuichi  
“Synthesis and Physical Properties of Novel A-site Ordered Perovskite Oxides with Mn Ion at A Site”

— **Organotransition Metal Chemistry** —

- LW “Activity Report: Organotransition Metal Chemistry Laboratory”
- GE WAKIOKA, Masayuki; WANG, Qifeng; NAKAMURA, Yuki; KIKUZAKI, Yuuta; TAKITA, Ryo; OZAWA, Fumiyuki  
“Palladium-Catalyzed Dehydrohalogenative Polycondensation of 2-Bromo-3-alkylthiophene”

— **Photonic Elements Science** —

- LW “Research Topics in Photonic Elements Science Group”

— **Bioknowledge Systems** —

- LT TOKIMATSU, Toshiaki; KOTERA, Masaaki; MORIYA, Yuki; NAKAGAWA, Zen-ichi; YABUZAKI, Junko; HATTORI, Masahiro; KANEHISA, Minoru; GOTO, Susumu  
“Development of the GenomeNet Integrated Pharmaceutical and Compound Database”

— **Biological Information Networks** —

- GE POOLSAP, Unyane  
“Using Binding Profiles to Predict RNA Secondary Structures with Binding Sites”

— Pathway Engineering —

- SHIGA, Motoki  
“Gene Clustering with Multiple Networks”

— Research Center for Low Temperature and Materials  
Sciences —

- TERASHIMA, Takahito; SHISHIDO, Hiroaki; MIZUKAMI,  
Yuta; SHIBAUCHI, Takasada; MATSUDA, Yuji  
“Preparation and Properties of the Artificial Superlattices of  
Heavy Fermion Superconductors”